DSP (CONTINUED)

DSP No.	Algorithm ID	Display Name	DSP Name
[67]	08	Dist 2	Distortion 2
[68]	08	Metal	Metal
[69]	08	Fuzz	Fuzz
[70]	M29	CrnPhase	Crunch - Phaser
[71]	M29	Od Phase	Overdrive - Phaser
[72]	M30	Crn Cho	Crunch - Chorus
[73]	M30	OdChorus	Overdrive - Chorus
[74]	M30	Dist Cho	Distortion - Chorus
[75]	M30	MetalCho	Metal - Chorus
[76]	M31	DistFlan	Distortion - Flanger
[77]	M31	Met Flan	Metal - Flanger
[78]	M28	CrnDelay	Crunch - Delay
[79]	M28	Od Delay	Overdrive - Delay
[80]	M28	DistDly 1	Distortion - Delay 1
[81]	M28	DistDly 2	Distortion - Delay 2
[82]	M28	MetalDly	Metal - Delay
[83]	M28	Fuzz Dly	Fuzz - Delay
[84]	M24	CrChoDly	Crunch - Chorus - Delay
[85]	M24	DsChoDly	Distortion - Chorus - Delay
[86]	M25	CmpCrDly	Compressor - Crunch - Delay
[87]	M26	AWhCrDly	Auto Wah - Crunch - Delay
[88]	M26	AWhOdDly	Auto Wah - Overdrive - Delay
[89]	M26	AWhDsDly	Auto Wah - Distortion - Delay
[90]	M27	LWhOdDly	LFO Wah - Overdrive - Delay
[91]	M27	LWhDsDly	LFO Wah - Distortion - Delay
SFX			
[92]	14	Ring Mod	Ring Modulator
[93]	M12	RgChoDly	Ring Modulator - Chorus - Delay
[94]	M13	RingDist	Ring Modulator - Distortion
[95]	15	Lo-Fi	Lo-Fi
[96]	M11	CompLoFi	Compressor - Lo-Fi
[97]	M14	LoFi Ref	Lo-Fi - Reflection
[98]	M15	Crn LoFi	Crunch - Lo-Fi
[99]	M15	DistLoFi	Distortion - Lo-Fi

DSP No.	Algorithm ID	Display Name	DSP Name
[40]	23	GateRvb 1	Gate Reverb 1
[41]	23	GateRvb 2	Gate Reverb 2
[42]	24	GateRvb 3	Gate Reverb 3
[43]	24	GateRvb 4	Gate Reverb 4
Pan/Tremolo Fx			
[44]	01	Tremolo	Tremolo
[45]	M09	Cho Trem	Chorus - Tremolo
[46]	00	Auto Pan	Auto Pan
[47]	M10	PhaAPan 1	Phaser - Auto Pan 1
[48]	M10	PhaAPan 2	Phaser - Auto Pan 2
[49]	M20	PhaChoAP	Phaser - Chorus - Auto Pan
Rotary Fx			
[50]	11	Rotary 1	Rotary 1
[51]	11	Rotary 2	Rotary 2
[52]	12	Od Rot 1	Overdrive - Rotary 1
[53]	12	Od Rot 2	Overdrive - Rotary 2
[54]	M17	RotRef 1	Rotary - Reflection 1
[55]	M17	RotRef 2	Rotary - Reflection 2
[56]	M17	RotRef 3	Rotary - Reflection 3
[57]	M16	OdRtRef 1	Overdrive - Rotary - Reflection 1
[58]	M16	OdRtRef 2	Overdrive - Rotary - Reflection 2
[59]	M16	OdRtRef 3	Overdrive - Rotary - Reflection 3
Wah Fx			
[60]	04	LFO Wah	LFO Wah
[61]	05	Auto Wah	Auto Wah
[62]	M21	AWhChDly	Auto Wah - Chorus - Delay
[63]	M22	LWhChDly	LFO Wah - Chorus - Delay
Guitar Fx			
[64]	08	Crunch	Crunch
[65]	08	Ovrdrive	Overdrive
[66]	08	Dist 1	Distortion 1

DSP No.	Algorithm ID	Display Name	DSP Name
Flanger			
[12]	26	Flanger	Flanger
[13]	M07	EnhaFlan	Enhancer - Flanger
Delay			
[14]	28	Delay	Delay
[15]	22	3Tap Dly	3-Tap Delay
[16]	20	St Delay	Stereo Delay
[17]	21	StXDelay	Stereo Cross Delay
[18]	M06	Enha Dly	Enhancer - Delay
[19]	25	Reflect	Reflection
Cho/Flanger/Delay Combination			
[20]	M02	PhaCho 1	Phaser - Chorus 1
[21]	M02	PhaCho 2	Phaser - Chorus 2
[22]	M04	PhaDly 1	Phaser - Delay 1
[23]	M04	PhaDly 2	Phaser - Delay 2
[24]	M00	ChoDly 1	Chorus - Delay 1
[25]	M00	ChoDly 2	Chorus - Delay 2
[26]	M01	ChoDly 3	Chorus - Delay 3
[27]	M01	ChoDly 4	Chorus - Delay 4
[28]	M19	CmpDelay	Compressor - Delay
[29]	M18	CmpEnDly	Compressor - Enhancer -Delay
[30]	M23	CmpChoRf	Compressor - Chorus -Reflection
[31]	M08	Cho Flan	Chorus - Flanger
[32]	M03	FlanDly 1	Flanger - Delay 1
[33]	M03	FlanDly 2	Flanger - Delay 2
Reverb			
[34]	27	RvbRoom1	Reverb Room 1
[35]	27	RvbRoom2	Reverb Room 2
[36]	27	RvbRoom3	Reverb Room 3
[37]	27	RvbHall 1	Reverb Hall 1
[38]	27	RvbHall 2	Reverb Hall 2
[39]	27	RvbPlate	Reverb Plate

Effect List

DSP Algorithm List

Number	Name	Function	Parameters
00	Auto Pan	Continually performs left-right panning of the input signal in accordance with an LFO.	0: Rate (0 to 127) – Adjusts the panning rate. 1: Depth (0 to 127) – Adjusts the panning depth.
01	Tremolo	– Adjusts volume of input signal in accordance with an LFO.	0: Rate (0 to 127) – Adjusts the tremolo rate. 1: Depth (0 to 127) – Adjusts the tremolo depth.
02	2BandEQ	This is a two-band equalizer.	0: Low Frequency [0 (200Hz), 1 (400Hz), 2 (800Hz)] – Adjusts the cutoff frequency of the low-band equalizer. 1: Low Gain (-12, -11, -10 to +10, +11, +12) – Adjusts the gain of the low-band equalizer. 2: High Frequency [0 (6.0kHz), 1 (8.0kHz), 2 (10kHz)] – Adjusts the cutoff frequency of the high-band equalizer. 3: High Gain (-12, -11, -10 to +10, +11, +12) – Adjusts the gain of the high-band equalizer.
03	3BandEQ	This is a three-band equalizer.	0: Low Frequency [0 (200Hz), 1 (400Hz), 2 (800Hz)] – Adjusts the cutoff frequency of the low-band equalizer. 1: Low Gain (-12, -11, -10 to +10, +11, +12) – Adjusts the gain of the low-band equalizer. 2: Mid Frequency [0 (1.0kHz), 1 (1.3kHz), 2 (1.6kHz), 3 (2.0kHz), 4 (3.0kHz), 5 (4.0kHz), 6 (6.0kHz), 7 (8.0kHz)] – Adjusts the center frequency of the mid-band equalizer. 3: Mid Gain (-12, -11, -10 to +10, +11, +12) – Adjusts the gain of the mid-band equalizer. 4: High Frequency [0 (6.0kHz), 1 (8.0kHz), 2 (10kHz)] – Adjusts the cutoff frequency of the high-band equalizer. 5: High Gain (-12, -11, -10 to +10, +11, +12) – Adjusts the gain of the high-band equalizer.
04	LFO Wah	This is a "wah" effect that can automatically affect the frequency in accordance with an LFO.	0: Input Level (0 to 127) – Adjusts the input level. The input signal can become distorted when the level of the sound being input, the number of chords, or the resonance value is large. Adjust this parameter to eliminate such distortion. 1: Resonance (0 to 127) – Adjusts the resonance of the sound. 2: Manual (0 to 127) – Adjusts the frequency used as the basis for the wah filter. 3: LFO Rate (0 to 127) – Adjusts the rate of the LFO. 4: LFO Depth (0 to 127) – Adjusts the depth of the LFO.
05	Auto Wah	This is a "wah" effect that can automatically affect the frequency in accordance with the level of the input signal.	0: Input Level (0 to 127) – Adjusts the input level. The input signal can become distorted when the level of the sound being input, the number of chords, or the Resonance value is large. Adjust this parameter to eliminate such distortion. 1: Resonance (0 to 127) – Adjusts the resonance of the sound. 2: Manual (0 to 127) – Adjusts the frequency used as the basis for the wah filter. 3: Depth (-64 to 0 to +63) – Adjusts the depth of the wah in accordance with the level of the input signal. Setting a positive value causes the wah filter to open in direct proportion with the size of the input signal, producing a bright sound. Setting a negative value causes the Wah filter to close in accordance with the size of the input signal, which produces a dark tone quality. However, large input re-opens the Wah filter, even if it is closed.
06	Compressor	Compresses the input signal, which can suppress level variation and make it possible to sustain dampened sounds longer.	0: Depth (0 to 127) – Adjusts compression of the audio signal. 1: Attack (0 to 127) – Adjusts the attack amount of the input signal. A smaller value causes prompt compressor operation, which suppresses the attack of the input signal. A larger values delays compressor operation, which causes attack to be output as-is. 2: Release (0 to 127) – Adjusts the time from the point when the input signal drops below a certain level until the compression operation is stopped. When an attack feeling is desired (no compression at the onset of the sound), set this parameter to as low a value as possible. To apply compression at all times, set a high value. 3: Level (0 to 127) – Adjusts the output level. The output volume changes in accordance with the Depth setting and the characteristics of the input tone. Use this parameter to correct for such changes.
07	Limiter	This is an effector that you can use to set an upper limit value on the level of the input signal.	0: Limit (0 to 127) – Adjusts the volume level from which the limit is applied. 1: Attack (0 to 127) – Adjusts the attack amount of the input signal. 2: Release (0 to 127) – Adjusts the time from when the input signal drops below a certain level until the limit operation stops. 3: Level (0 to 127) – Adjusts the level being output. The output volume changes in accordance with the Limit setting and the characteristics of the input tone. Use this parameter to correct for such changes.
08	Distortion	This effect provides Distortion + AmpSimulator.	0: Gain (0 to 127) – Adjusts the input gain. 1: Low (0 to 127) – Adjusts the low-band gain. The cutoff frequency differs according to the preset DSP. 2: High (0 to 127) – Adjusts the high-band gain. The cutoff frequency differs according to the preset DSP. 3: Level (0 to 127) – Adjusts the output level.

Number	Name	Function	Parameters
09	Stereo Phaser	This is a stereo phaser that modulates the phase in accordance with a sine wave LFO.	0: Resonance (0 to 127) – Adjusts the resonance of the sound. 1: Manual (-64 to 0 to +63) – Adjusts the phaser shift volume, which is used for reference. 2: Rate (0 to 127) – Adjusts the rate of the LFO. 3: Depth (0 to 127) – Adjusts the depth of the LFO. 4: Wet Level (0 to 127) – Adjusts the volume level of the effect.
10	Phaser	This is a monaural phaser that modulates the phase in accordance with a sine wave LFO.	0: Resonance (0 to 127) – Adjusts the resonance of the sound. 1: Manual (-64 to 0 to +63) – Adjusts the phaser shift volume, which is used for reference. 2: Rate (0 to 127) – Adjusts the rate of the LFO. 3: Depth (0 to 127) – Adjusts the depth of the LFO. 4: Wet Level (0 to 127) – Adjusts the level of the effect sound.
11	Rotary	This is a rotary speaker simulator.	0: Speed (Slow, Fast) Switches the speed mode between fast and slow. 1: Break (Rotate, Stop) Stops speaker rotation. 2: Fall Accel (0 to 127) – Adjusts acceleration when the speed mode is switched from fast to slow. 3: Rise Accel (0 to 127) – Adjusts acceleration when the speed mode is switched from slow to fast. 4: Slow Rate (0 to 127) – Adjusts speaker rotation speed in the slow speed mode. 5: Fast Rate (0 to 127) – Adjusts speaker rotation speed in the fast speed mode.
12	Drive Rotary	This is an overdrive-rotary speaker simulator.	0: Overdrive Gain (0 to 127) – Adjusts overdrive gain. 1: Overdrive Level (0 to 127) – Adjusts the output level of the overdrive. 2: Speed (Slow, Fast) Switches the speed mode between fast and slow. 3: Break (Rotate, Stop) Stops speaker rotation. 4: Fall Accel (0 to 127) – Adjusts acceleration when the speed mode is switched from fast to slow. 5: Rise Accel (0 to 127) – Adjusts acceleration when the speed mode is switched from slow to fast. 6: Slow Rate (0 to 127) – Adjusts speaker rotation speed of the slow speed mode. 7: Fast Rate (0 to 127) – Adjusts speaker rotation speed of the fast speed mode.
13	Enhancer	Enhances the outlines of the low range and high range of the input signal.	0: Low Frequency (0 to 127) – Adjusts the low range enhancer frequency. 1: Low Gain (0 to 127) – Adjusts the low range enhancer gain. 2: High Frequency (0 to 127) – Adjusts the high range enhancer frequency. 3: High Gain (0 to 127) – Adjusts the high range enhancer gain.
14	Ring Modulator	This is a ring modulator (AM modulator) that makes it possible to modulate the frequency of internal oscillator (OSC) in accordance with an internal LFO.	0: OSC Frequency (0 to 127) Sets the reference frequency of the internal OSC. 1: LFO Rate (0 to 127) – Adjusts the rate of the LFO. 2: LFO Depth (0 to 127) – Adjusts the depth of the LFO. 3: Wet Level (0 to 127) – Adjusts the level of the effect sound. 4: Dry Level (0 to 127) – Adjusts the level of the original sound.
15	Lo-Fi	This is an effector that reproduces a retro-type Lo-Fi sound using Noise Generator 1 (phonograph record player type scratch noise generator) and Noise Generator 2 (FM radio type white noise and pink noise continuous noise generator), and by using noise modulation (amplitude modulation = AM) and distortion of frequency characteristics.	0: Noise Level 1 (0 to 127) – Adjusts the level of Noise Generator 1. 1: Noise Density 1 (0 to 127) – Adjusts the noise density of Noise Generator 1. 2: Noise Level 2 (0 to 127) – Adjusts the level of Noise Generator 2. 3: Noise Density 2 (0 to 127) – Adjusts the noise density of Noise Generator 2. 4: Tone (0 to 127) – Adjusts the tone. 5: Resonance (0 to 127) – Adjusts the resonance of the sound. 6: Bass (-64 to 0 to +63) – Adjusts the volume of low sounds. 7: Level (0 to 127) – Adjusts the output level.
16	1-Phase Chorus	This is a monaural chorus in accordance with a sine wave LFO.	0: LFO Rate (0 to 127) – Adjusts the rate of the LFO. 1: LFO Depth (0 to 127) – Adjusts the depth of the LFO. 2: Feedback (-64 to 0 to +63) – Adjusts the feedback of the sound. 3: Wet Level (0 to 127) – – Adjusts the level of the effect sound.
17	Sin 2-Phase Chorus	This is a stereo chorus in accordance with a sine wave LFO.	0: LFO Rate (0 to 127) – – Adjusts the rate of the LFO. 1: LFO Depth (0 to 127) – Adjusts the depth of the LFO. 2: Feedback (-64 to 0 to +63) – Adjusts the feedback of the sound. 3: Wet Level (0 to 127) – Adjusts the level of the effect sound.
18	3-Phase Chorus	This is a 3-phase chorus in accordance with two LFOs of with different sine wave rates.	0: Rate1 (Fast LFO Rate, 0 to 127) – Adjusts the rate of LFO1. 1: Depth1 (Fast LFO Depth, 0 to 127) – Adjusts the depth of LFO1. 2: Rate2 (Slow LFO Rate, 0 to 127) – Adjusts the rate of LFO2. 3: Depth2 (Slow LFO Depth, 0 to 127) – Adjusts the depth of LFO2. 4: Wet Level (0 to 127 – Adjusts the level of the effect sound.
19	Tri 2-Phase Chorus	This is a stereo chorus in accordance with triangular wave LFO.	0: LFO Rate (0 to 127) – Adjusts the rate of the LFO. 1: LFO Depth (0 to 127) – Adjusts the depth of the LFO. 2: Feedback (-64 to +63) – Adjusts the feedback of the sound. 3: Wet Level (0 to 127) – Adjusts the level of the effect sound.
20	Stereo Delay 1	This is a delay of stereo input and output.	0: Delay Time (0 to 127) – Adjusts the delay time. 1: Wet Level (0 to 127) – Adjusts the level of the effect sound. 2: Feedback (0 to 127) – Adjusts the repeat of the delay. 3: High Damp (0 to 127) – Adjusts damping of the high-range delay sound. The smaller the value, the greater the damping of high-range delay sound. 4: Ratio L (0 to 127) – Adjusts the delay time of the left channel, proportional to the value set for Delay Time. 5: Ratio R (0 to 127) – Adjusts the delay time of the right channel, proportional to the value set for Delay Time.

Number	Name	Function	Parameters
21	Stereo Delay 2	This is a cross feedback delay of stereo input and output.	0: Delay Time (0 to 127) – Adjusts the delay time. 1: Wet Level (0 to 127) – Adjusts the level of the effect sound. 2: Feedback (0 to 127) – Adjusts the repeat of the delay. 3: High Damp (0 to 127) – Adjusts damping of the high-range delay sound. The smaller the value, the greater the damping of high-range delay sound. 4: Ratio L (0 to 127) – Adjusts the delay time of the left channel, proportional to the value set for Delay Time. 5: Ratio R (0 to 127) – Adjusts the delay time of the right channel, proportional to the value set for Delay Time.
22	3-Tap Delay	This is left/center/right 3-tap delay.	0: Delay Time (0 to 127) – Adjusts the delay time. 1: Wet Level (0 to 127) – Adjusts the level of the effect sound. 2: Feedback (0 to 127) – Adjusts the repeat of the delay. 3: High Damp (0 to 127) – Adjusts damping of the high-range delay sound. The smaller the value, the greater the damping of high-range delay sound. 4: Ratio L (0 to 127) – Adjusts the delay time of the left channel. Proportional to the value set for Delay Time. 5: Ratio C (0 to 127) – Adjusts the delay time of the center channel. Proportional to the value set for Delay Time. 6: Ratio R (0 to 127) – Adjusts the delay time of the right channel. Proportional to the value set for Delay Time.
23	Gate Reverb	This is a fader that creates artificial reverb that sounds like it is being cut with a gate.	0: LPF (0 to 127) – Adjusts the cutoff frequency of the low-pass filter. A smaller value cuts the high range. 1: HPF (0 to 127) – Adjusts the cutoff frequency of the high-pass filter. A larger value cuts the low range. 2: Feedback (0 to 127) – Adjusts the repeat of the reverb. 3: High Damp (0 to 127) – Adjusts damping of the high-range delay sound. The smaller the value, the greater the damping of high-range delay sound. 4: Diffusion (0 to 127) Provides fine adjustment of the reverb. 5: Wet Level (0 to 127) – Adjusts the level of the effect sound. 6: Dry Level (0 to 127) – Adjusts the level of the original sound.
24	Reverse Gate Reverb	This is gate reverb with a reverse rotation effect.	0: LPF (0 to 127) – Adjusts the cutoff frequency of the low-pass filter. A smaller value cuts the high range. 1: HPF (0 to 127) – Adjusts the cutoff frequency of the high-pass filter. A larger value cuts the low range. 2: Feedback (0 to 127) – Adjusts the repeat of the reverb. 3: High Damp (0 to 127) – Adjusts damping of the high-range reverb sound. The smaller the value, the greater the damping of high-range reverb sound. 4: Diffusion (0 to 127) Provides fine adjustment of the reverb. 5: Wet Level (0 to 127) – Adjusts the level of the effect sound. 6: Dry Level (0 to 127) – Adjusts the level of the original sound.
25	Reflection	This is an effector that extracts the first reflected sound from a reverb sound.	0: Type (0 to 7) Selects from among the eight available reflection patterns. 1: Wet Level (0 to 127) – Adjusts the level of the effect sound. 2: Feedback (0 to 127) – Adjusts the repeat of the reflected sound. 3: Tone (0 to 127) – Adjusts the tone of the reflected sound.
26	Reflection	This is a flanger in accordance with a sine wave LFO.	0: LFO Rate (0 to 127) – Adjusts the rate of the LFO. 1: LFO Depth (0 to 127) – Adjusts the depth of the LFO. 2: Feedback (-64 to +63) – Adjusts the feedback of the sound. 3: Wet Level (0 to 127) – Adjusts the level of the effect sound.
27	Reverb	This is an effector that preserves the breadth of a sound by adding a reverb sound.	0: Tone (0 to 127) – Adjusts the tone of the reverb sound. 1: Time (0 to 127) – Adjusts the reverb time. 2: High Damp (0 to 127) – Adjusts damping of the high-range reverb sound. The smaller the value, the greater the damping of high-range reverb sound. 3: ER Level (0 to 127) – Adjusts the level of the initial reflection. 4: Wet Level (0 to 127) – Adjusts the level of the effect sound.
28	2-Tap Delay	This is left/right 2 tap delay.	0: Delay Time (0 to 127) – Adjusts the delay time. 1: Wet Level (0 to 127) – Adjusts the level of the effect sound. 2: Feedback (0 to 127) – Adjusts the repeat of the delay. 3: High Damp (0 to 127) – Adjusts damping of the high-range delay sound. The smaller the value, the greater the damping of high-range delay sound. 4: Ratio L (0 to 127) – Adjusts the delay time of the left channel, proportional to the value set for Delay Time. 5: Ratio R (0 to 127) – Adjusts the delay time of the right channel, proportional to the value set for Delay Time.

The following "Multi" algorithms are used in combination with the algorithms described previously in this section. Parameters are shared by both types of algorithms.

Number	Name	Function	Parameters
M00	Multi00 (Sin 2-Phase Chorus — 2-Tap Delay)	This is a multi effector that is related to Sin 2-Phase Chorus — 2-Tap Delay.	0: Chorus LFO Rate 1: Chorus LFO Depth 2: Chorus Feedback 3: Chorus Wet Level 4: Delay Time 5: Delay Wet Level 6: Delay Feedback 7: Delay High Damp
M01	Multi01 (3-Phase Chorus — 3-Tap Delay)	This is a multi effector that is related to 3-Phase Chorus — 3-Tap Delay.	0: Chorus Rate 1 1: Chorus Depth 1 2: Chorus Rate 2 3: Chorus Depth 2 4: Chorus Wet Level 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M02	Multi02 (Phaser — 3-Phase Chorus)	This is a multi effector that is related to Phaser — 3-Phase Chorus.	0: Phaser Resonance 1: Phaser Manual 2: Phaser Rate 3: Phaser Depth 4: Chorus Rate 1 5: Chorus Depth 1 6: Chorus Rate 2 7: Chorus Depth 2
M03	Multi03 (Flanger — 2-Tap Delay)	This is a multi effector that is related to Flanger — 2-Tap Delay.	0: Flanger LFO Rate 1: Flanger LFO Depth 2: Flanger Feedback 3: Flanger Wet Level 4: Delay Time 5: Delay Wet Level 6: Delay Feedback 7: Delay High Damp
M04	Multi04 (Stereo Phaser — Stereo Delay 1)	This is a multi effector that is related to Stereo Phaser — Stereo Delay 1.	0: Phaser Resonance 1: Phaser Manual 2: Phaser Rate 3: Phaser Depth 4: Phaser Wet Level 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M05	Multi05 (Enhancer — 1- Phase Chorus)	This is a multi effector related to Enhancer — 1- Phase Chorus.	0: Enhancer Low Frequency 1: Enhancer Low Gain 2: Enhancer High Frequency 3: Enhancer High Gain 4: Chorus LFO Rate 5: Chorus LFO Depth 6: Chorus Feedback 7: Chorus Wet Level
M06	Multi06 (Enhancer — 2- Tap Delay)	This is a multi effector that is related to Enhancer — 2-Tap Delay.	0: Enhancer Low Frequency 1: Enhancer Low Gain 2: Enhancer High Frequency 3: Enhancer High Gain 4: Delay Time 5: Delay Wet Level 6: Delay Feedback 7: Delay High Damp
M07	Multi07 (Enhancer — Flanger)	This is a multi effector related to Enhancer — Flanger.	0: Enhancer Low Frequency 1: Enhancer Low Gain 2: Enhancer High Frequency 3: Enhancer High Gain 4: Flanger LFO Rate 5: Flanger LFO Depth 6: Flanger Feedback 7: Flanger Wet Level

Number	Name	Function	Parameters
M08	Multi08 (Sin 2-Phase Chorus — Flanger)	This is a multi effector that is related to Sin 2-Phase Chorus — Flanger.	0: Chorus LFO Rate 1: Chorus LFO Depth 2: Chorus Feedback 3: Chorus Wet Level 4: Flanger LFO Rate 5: Flanger LFO Depth 6: Flanger Feedback 7: Flanger Wet Level
M09	Multi09 (Sin 2-Phase Chorus — Tremolo)	This is a multi effector that is related to Sin 2-Phase Chorus — Tremolo.	0: Chorus LFO Rate 1: Chorus LFO Depth 2: Chorus Feedback 3: Chorus Wet Level 4: Tremolo Rate 5: Tremolo Depth
M10	Multi10 (Stereo Phaser — Auto Pan)	This is a multi effector that is related to Stereo Phaser — Auto Pan.	0: Phaser Resonance 1: Phaser Manual 2: Phaser Rate 3: Phaser Depth 4: Phaser Wet Level 5: Auto Pan Rate 6: Auto Pan Depth
M11	Multi11 (Compressor — Lo- Fi)	This is a multi effector related to Compressor — Lo-Fi.	0: Compressor Depth 1: Compressor Attack 2: Compressor Level 3: Lo-Fi Noise 1 4: Lo-Fi Noise 2 5: Lo-Fi Tone 6: Lo-Fi Resonance 7: Lo-Fi Bass
M12	Multi12 (Ring Modulator — Sin 2-Phase Chorus — 2-Tap Delay)	This is a multi effector that is related to Ring Modulator — Sin 2-Phase Chorus.	0: Ring OSC Frequency 1: Ring LFO Rate 2: Ring LFO Depth 3: Ring Wet Level 4: Ring Dry Level 5: Chorus LFO Depth 6: Delay Time 7: Delay Wet Level
M13	Multi13 (Ring Modulator — Distortion)	This is a multi effector related to Ring Modulator — Distortion.	0: Ring OSC Frequency 1: Ring LFO Rate 2: Ring LFO Depth 3: Ring Wet Level 4: Ring Dry Level 5: Distortion Gain 6: Distortion Tone 7: Distortion Level
M14	Multi14 (Lo- Fi — Reflection)	This is a multi effector related to Lo-Fi — Reflection.	0: Lo-Fi Noise1 1: Lo- Fi Noise2 2: Lo- Fi Tone 3: Lo- Fi Resonance 4: Reflection Type 5: Reflection Wet Level 6: Reflection Feedback 7: Reflection Tone
M15	Multi15 (Distortion — Lo- Fi)	This is a multi effector related to Distortion — Lo- Fi.	0: Distortion Gain 1: Distortion Low 2: Distortion High 3: Distortion Level 4: Lo- Fi Noise1 5: Lo- Fi Noise2 6: Lo- Fi Tone 7: Lo- Fi Resonance
M16	Multi16 (Drive Rotary — Reflection)	This is a multi effector related to Drive Rotary — Reflection.	0: Drive Rotary Gain 1: Drive Rotary Level 2: Drive Rotary Speed 3: Drive Rotary Slow Rate 4: Drive Rotary Fast Rate 5: Reflection Wet Level 6: Reflection Feedback 7: Reflection Tone

Number	Name	Function	Parameters
M17	Multi17 (Rotary — Reflection)	This is a multi effector related to Rotary — Reflection.	0: Rotary Speed 1: Rotary Break 2: Rotary Slow Rate 3: Rotary Fast Rate 4: Reflection Wet Level 5: Reflection Feedback 6: Reflection Tone
M18	Multi18 (Compressor - Enhancer — 2-Tap Delay)	This is a multi effector that is related to Compressor - Enhancer — 2-Tap Delay.	0: Compressor Depth 1: Compressor Attack 2: Compressor Level 3: Enhancer Low Gain 4: Enhancer High Gain 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M19	Multi19 (Compressor — Stereo Delay 1)	This is a multi effector related to Compressor — Stereo Delay 1.	0: Compressor Depth 1: Compressor Attack 2: Compressor Release 3: Compressor Level 4: Delay Time 5: Delay Wet Level 6: Delay Feedback 7: Delay High Damp
M20	Multi20 (Phaser - 1-Phase Chorus — Auto Pan)	This is a multi effector that is related to Phaser - 1-Phase Chorus — Auto Pan.	0: Phaser Resonance 1: Phaser Manual 2: Phaser Rate 3: Phaser Depth 4: Chorus LFO Rate 5: Chorus LFO Depth 6: Auto Pan Rate 7: Auto Pan Depth
M21	Multi21 (Auto Wah - Tri 2 Phase Chorus — 2- Tap Delay)	This is a multi effector that is related to Auto Wah - Tri 2-Phase Chorus — 2-Tap Delay.	0: Wah Resonance 1: Wah Manual 2: Wah Depth 3: Chorus LFO Rate 4: Chorus LFO Depth 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M22	Multi22 (LFO Wah -Tri 2-Phase Chorus — 2- Tap Delay)	This is a multi effector that is related to LFO Wah - Tri 2-Phase Chorus — 2-Tap Delay.	0: Wah Resonance 1: Wah Manual 2: Wah LFO Rate 3: Wah LFO Depth 4: Chorus LFO Depth 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M23	Multi23 (Compressor - Sin 2-Phase Chorus — Reflection)	This is a multi effector that is related to Compressor - Sin 2-Phase Chorus — Reflection.	0: Compressor Depth 1: Compressor Attack 2: Compressor Level 3: Chorus LFO Rate 4: Chorus LFO Depth 5: Reflection Wet Level 6: Reflection Feedback 7: Reflection Tone
M24	Multi24 (Distortion - 1-Phase Chorus — 2-Tap Delay)	This is a multi effector that is related to Distortion - 1-Phase Chorus — 2- Tap Delay.	0: Distortion Gain 1: Distortion Low 2: Distortion High 3: Distortion Level 4: Chorus LFO Depth 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M25	Multi25 (Compressor - Distortion — 2-Tap Delay)	This is a multi effector that is related to Compressor - Distortion — 2-Tap Delay.	0: Compressor Depth 1: Distortion Gain 2: Distortion Low 3: Distortion High 4: Distortion Level 5: Delay Time 6: Delay Wet Level 7: Delay Feedback

Number	Name	Function	Parameters
M26	Multi26 (Auto Wah - Distortion — 2-Tap Delay)	This is a multi effector that is related to Auto Wah - Distortion — 2-Tap Delay.	0: Wah Manual 1: Wah Depth 2: Distortion Gain 3: Distortion Tone 4: Distortion Level 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M27	Multi27 (LFO Wah - Distortion — 2-Tap Delay)	This is a multi effector that is related to LFO Wah - Distortion — 2-Tap Delay.	0: Wah Manual 1: Wah LFO Rate 2: Wah LFO Depth 3: Distortion Gain 4: Distortion Level 5: Delay Time 6: Delay Wet Level 7: Delay Feedback
M28	Multi28 (Distortion — 3-Tap Delay)	This is a multi effector that is related to Distortion — 3-Tap Delay.	0: Distortion Gain 1: Distortion Low 2: Distortion High 3: Distortion Level 4: Delay Time 5: Delay Wet Level 6: Delay Feedback 7: Delay High Damp
M29	Multi29 (Distortion — Phaser)	This is a multi effector related to Distortion — Phaser.	0: Distortion Gain 1: Distortion Low 2: Distortion High 3: Distortion Level 4: Phaser Resonance 5: Phaser Manual 6: Phaser Rate 7: Phaser Depth
M30	Multi30 (Distortion — Sin 2-Phase Chorus)	This is a multi effector that is related to Distortion — Sin 2-Phase Chorus.	0: Distortion Gain 1: Distortion Low 2: Distortion High 3: Distortion Level 4: Chorus LFO Rate 5: Chorus LFO Depth 6: Chorus Feedback 7: Chorus Wet Level
M31	Multi31 (Distortion — Flanger)	This is a multi effector related to Distortion — Flanger.	0: Distortion Gain 1: Distortion Low 2: Distortion High 3: Distortion Level 4: Flanger LFO Rate 5: Flanger LFO Depth 6: Flanger Feedback 7: Flanger Wet Level

MIDI IMPLEMENTATION CHART

Version: 1.0

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	
Mode	Default Messages Altered	Mode 3 X ✳✳✳✳✳✳✳✳✳✳✳✳✳✳	Mode 3 X ✳✳✳✳✳✳✳✳✳✳✳✳✳✳	
Note Number:	True voice	0-127 ✳✳✳✳✳✳✳✳✳✳✳✳✳✳	0-127 0-127*1	*1 Depends on tone.
Velocity	Note ON Note OFF	O 9nH v = 1-127 X 9nH v = 0	O 9nH v = 1-127 X	
After Touch	Key's Ch's	X X	X O	
Pitch Bender		X	O	
Control Change	0, 32 1 6, 38 7 10 11 16 17 18 19 64 66 67 71 72 73 74 76 77 78 80 81 82 83 91 93 98, 99 100, 101 120 121	O O O O O O O O O O O*2 O*2 O*2 O O O O O O O O O O O O O X O X O	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O	Bank select Modulation Data entry Volume Pan Expression DSP Parameter0 DSP Parameter1 DSP Parameter2 DSP Parameter3 Hold1 Sostenuto Soft pedal Resonance Release Time Attack Time Brightness Vibrato rate Vibrato depth Vibrato delay DSP Parameter4 DSP Parameter5 DSP Parameter6 DSP Parameter7 Reverb send Chorus send NRPN LSB, MSB RPN LSB, MSB All sound off Reset all controller
Program Change :	True #	O 0-127 ✳✳✳✳✳✳✳✳✳✳✳✳✳✳	O 0-127 ✳✳✳✳✳✳✳✳✳✳✳✳✳✳	
System Exclusive		O	O	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: Local ON/OFF : All notes OFF : Active Sense : Reset	X X X X	X O O X	
Remarks		*2 Selected in accordance with sustain pedal setting.		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO O : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO X : No

MIDI Implementation Chart

SPECIFICATIONS

Number of Keys 61

Polyphonic Sound .... 32-note (Max.)

Preset Tones 348
(100 panel tones, 128 General MIDI,
10 drum sounds, 10 user,
100 advanced tones)
with Layer and Split

Rhythm Instrument Tones 61

Effects .... DSP
(110 types: internal, 10 user areas)
Reverb (16 types)
Chorus (16 types)

Demo Tunes 2

Auto Accompaniment

Rhythm Patterns .... 100 + 4 user areas

Tempo .... Variable (226 steps, 30 to 255)

Chords .... 3 fingering methods
(Concert Chord, Fingered, Full Range)

Rhythm Controller .... Start/Stop,
Intro/Ending 1/2
Variation/Fill-In 1/2
Synchro/Fill-In Next

Accompaniment Volume ..... 0 to 127 (128 steps)

One-Touch Preset .... Recalls tone and tempo
settings best suited for the selected rhythm

Registration Memory

Number of Setups .... 16 (4 locations, 4 banks)

Memory Contents .... Tone, rhythm, tempo
split setting, split point, layer setting
mixer settings, mixer settings
effect setting, equalizer setting
touch response setting
SUSTAIN/ASSIGNABLE JACK setting
transpose setting, tuning setting
accompaniment volume setting
harmonize setting

Memory Function

Songs 2

Recording Tracks 6
(2 through 6 are melody tracks)

Recording Methods .... Real-time, Step

Memory Capacity ..... Approximately 3,500 notes
(total for two songs)

Edit Function .... Equipped

Custom Tone Parameter Function

Parameters .... Attack time, release time,
resonance, cutoff frequency, vibrato type,
vibrato delay, vibrato depth, vibrato rate,
octave shift, level, touch sense, reverb send,
chorus send, DSP line, DSP type,
DSP parameter

Mixer Function

Channels 16

Parameters .... Program change number,
volume, expression, pan, coarse tuning,
fine tuning, on/off/solo

MIDI .... 16 multi-timbre receive,
GM Level 1 standard

Transpose .... –24 semitones to +24 semitones

Tuning .... Adjustable A4 = 440 Hz ±100 cents

Built-In Speakers .... 12 cm × 2

Terminals

MIDI Terminals .... IN, OUT

Assignable Terminal .... $1/4$-Inch Phone Jack
(sustain, sostenuto, soft, rhythm start/stop)

Power Supply .... 9V DC Jack

Headphones .... Stereo Standard Jack

Output Impedance: .... 140 Ohms

Output Voltage .... 4.5 V (RMS) MAX
at 47K ohm load

Power Sources .... DC: 6 D batteries
AC: 9V with AC adapter

Power Consumption .... 7.7 W

Dimensions (HWD) $5^{13}/_{16} \times 37^{7}/_{8} \times 14^{3}/_{4}$ Inches
(14.7 × 96 × 37.5 cm)

Weight (Without Batteries) .... 12 lbs 12 oz
(5.8 kg)

Included Accessories .... Sheet Music Stand

Specifications are typical; individual units might
vary. Specifications are subject to change and
improvement without notice.

NOTES